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Issued April 27, 1907.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF STATISTICS—BULLETIN NO. 50.

VICTOR H. OLMSTED, Chief of Bureau.

HOPS IN PRINCIPAL COUNTRIES:

THEIR SUPPLY, FOREIGN TRADE,
AND CONSUMPTION,

WITH

STATISTICS OF BEER BREWING.

BY

EUGENE MERRITT,

Scientific Assistant, Division of Foreign Markets.



WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1907.

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WASHINGTON:

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1907.

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LETTER OF TRANSMITTAL

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF STATISTICS,
Washington, D. C., January 30, 1907.

SIR: The shortage in the world's supply of hops, which has been made apparent since the gathering of the crop of 1906, and the prominent place now occupied by the United States as a grower and exporter of hops, have led to the preparation of the accompanying report on the supply of hops furnished by the principal countries of the world, the foreign trade in this product, and the consumption and prices of hops. The United States is capable of supplying the world with hops, however greatly the demand may increase, if the prices in the world's markets offer sufficient inducements.

The information contained in this report will, it is believed, be of much interest to hop growers, traders, and consumers, not only because it relates to the present commercial situation, but because it will be of continuing value for some years to come.

This report was prepared under the direction of George K. Holmes, chief of the Division of Foreign Markets. It is respectfully submitted with the recommendation that it be published as Bulletin No. 50 of this Bureau.

Respectfully,

VICTOR H. OLMSTED,
Chief of Bureau.

Hon. JAMES WILSON,
Secretary of Agriculture.



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HOPS IN PRINCIPAL COUNTRIES.^a

PRODUCTION IN THE UNITED STATES.

The United States is one of the three leading hop-producing countries of the world. During the last fifty years of the nineteenth century, New York was the principal hop-growing State of the United States, but the ratio that its crop has borne to the national crop has decreased. In the North Central States hop production was at its height in the seventies and eighties, but rapidly declined. From that region it spread to the Pacific coast, where in 1899 more than 60 per cent of the hops of the United States grew. (See Tables 1 and 23.)

The figures for both area and production for the last three census years show that hop production in New York has slowly declined. In the State of Washington, although the last census shows a decrease from 1890 in the production, the acreage is slightly increased. In the other Pacific States the production has increased very rapidly.

There are no official statistics to show the production of hops for the last fifteen years, except for 1899, but in Table 2 are given the figures as published by the California Fruit Grower for the Pacific coast States and by the American Agriculturist for New York. It has been assumed that the Pacific coast bale weighed 195 pounds and the New York bale 180 pounds. In addition there have been inserted the census figures for the crops of 1889, 1890, and 1899 and the commercial movement based upon the foreign trade and the consumption of hops by the breweries for 1899-1905.

^a The following reports have been used in compiling the information given in this bulletin: The United States—the Yearbook of the Department of Agriculture, Commerce and Navigation, Statistical Abstract, Reports of the Census, American Agriculturist, California Fruit Grower. United Kingdom—Statistical Abstract, Agricultural Statistics, Annual Statement of the Trade. Germany—Vierteljahrshefte zur Statistik des Deutschen Reichs, Auswärtiger Handel des deutschen Zollgebiets. Austria-Hungary—Statistik des Auswärtigen Handels des Österreichisch-Ungarischen Zollgebiets, Statistisches Jahrbuch des K. K. Ackerbauministeriums. France—Statistique Agricole, Tableau général du commerce et de la navigation. Belgium—Tableau général du commerce avec les pays étrangers. Netherlands—Statistiek van den in-uit-en doorvoer. Denmark—Statistisk Aarbog, Vareinførsel og udførsel. Russia—Obsor vneshnoi torgovli Rossiiskoi Imperii, Eghagodnik Ministerstva Finansov. Commonwealth of Australia—Trade and Customs Returns. Switzerland—Statistik des Warenverkehrs der Schweiz mit dem Auslande. Cape of Good Hope—Statistical Register. New Zealand—Statistical Register. Canada—Trade and Navigation. British India—Annual Statement of Seaborne Trade and Navigation.

TABLE 1.—*Area and production of hops, by States, Territories, and geographic divisions, census years 1850–1900. a*

State, Territory, or geographic division.	Area. ^b			Production.					
	1900.	1890.	1880.	1900.	1890.	1880.	1870.	1860.	1850.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Maine.....	(c)	37	219	60	24,873	48,214	296,850	102,987	40,120
New Hampshire.....	(c)	15	59	60	9,033	23,955	99,469	130,428	257,174
Vermont.....	6	81	264	4,400	51,705	109,350	527,927	638,677	288,023
Massachusetts.....	13	2	23	7,480	800	9,895	61,910	111,301	121,595
Rhode Island.....	(c)	.....	.....	40	.....	.....	249	50	277
Connecticut.....	.....	.....	.....	.....	.....	.....	1,004	959	554
New York.....	27,532	36,670	39,072	17,332,340	20,063,029	21,628,931	17,558,681	9,671,931	2,536,299
New Jersey.....	(c)	.....	.....	75	.....	.....	19,033	3,722	2,133
Pennsylvania.....	13	4	83	13,710	1,500	36,995	90,688	43,191	22,088
Delaware.....	.....	.....	.....	.....	.....	.....	800	414	348
Maryland and District of Columbia.....	(c)	.....	.....	230	.....	.....	2,800	2,958	1,885
Virginia.....	(c)	.....	12	165	.....	1,599	10,999	10,024	11,506
West Virginia.....	1	.....	.....	662	.....	.....	1,031	.....	.....
North Carolina.....	(c)	.....	.....	85	.....	.....	238	1,767	9,246
South Carolina.....	.....	.....	.....	.....	.....	.....	1,507	122	26
Georgia.....	.....	.....	.....	.....	.....	.....	2	199	261
Florida.....	.....	.....	.....	.....	.....	.....	.....	.....	14
Ohio.....	3	.....	9	2,910	.....	5,510	101,236	27,533	63,731
Indiana.....	1	29	69	640	10,464	21,236	63,884	27,884	92,796
Illinois.....	2	44	21	690	22,300	7,788	104,032	7,254	3,551
Michigan.....	10	121	491	3,560	64,815	266,010	828,269	60,602	10,663
Wisconsin.....	342	967	4,439	165,346	428,547	1,966,827	4,630,155	135,587	15,930
Minnesota.....	(c)	2	30	51	500	10,928	222,065	132	.....
Iowa.....	(c)	.....	51	120	.....	16,915	171,113	2,078	8,242
Missouri.....	1	1	.....	383	310	.....	19,297	2,265	4,130
North Dakota.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Dakota.....	(c)	.....	.....	50	.....	.....	.....	.....	.....
Nebraska.....	(c)	.....	.....	50	.....	.....	100	41	.....
Kansas.....	.....	.....	1	.....	.....	500	396	197	.....
Kentucky.....	4	.....	.....	1,668	.....	.....	947	5,899	4,309
Tennessee.....	(c)	.....	.....	307	.....	.....	565	1,581	1,032
Alabama.....	1	.....	.....	440	.....	.....	32	507	276
Mississippi.....	(c)	.....	.....	15	.....	.....	.....	248	473
Louisiana.....	.....	.....	.....	.....	.....	.....	.....	27	125
Texas.....	.....	.....	.....	.....	.....	.....	51	123	7
Indian Territory.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oklahoma.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arkansas.....	1	.....	.....	530	.....	.....	25	146	157
Montana.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wyoming.....	.....	2	.....	.....	750	.....	.....	.....	.....
Colorado.....	.....	20	.....	.....	18,300	.....	.....	.....	.....
New Mexico.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arizona.....	1	.....	.....	600	.....	.....	.....	.....	.....
Utah.....	.....	.....	.....	.....	.....	.....	322	545	50
Nevada.....	(c)	.....	.....	100	.....	.....	.....	.....	.....
Idaho.....	63	.....	.....	58,870	.....	.....	21	.....	.....
Washington.....	5,296	5,113	534	6,813,830	8,313,280	703,277	6,162	44	.....
Oregon.....	15,433	3,130	304	14,675,577	3,613,726	244,371	9,745	493	8
California.....	6,890	3,974	1,119	10,124,660	6,547,338	1,444,077	625,064	80	.....
Geographic division:	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Atlantic division.....	27,564	36,809	39,720	17,358,165	20,150,940	21,857,340	18,655,811	10,703,246	3,268,263
South Atlantic division.....	1	.....	12	1,142	.....	1,599	17,377	15,484	23,286
North Central division.....	359	1,164	5,111	173,800	526,936	2,295,714	6,140,547	263,573	199,043
South Central division.....	6	.....	.....	2,960	.....	.....	1,620	8,531	6,379
Western division.....	27,683	12,239	1,957	31,673,637	18,493,394	2,391,725	641,314	1,162	58
United States.....	55,613	50,212	46,800	49,209,704	39,171,270	26,546,378	25,456,669	10,991,996	3,497,029

^a The year of growth is the preceding year in each case.^b Not reported prior to 1880.^c Less than 1 acre.

TABLE 2.—*Annual production and commercial movement of hops, 1889–1906.*

[Statistics for 1889, 1890, and 1900 from Census reports; other figures for Pacific States from California Fruit Grower, and for New York from American Agriculturist.]

Year.	Estimated production.						Commer- cial move- ment, year beginning July 1.
	California.	Oregon.	Washing- ton.	Pacific coast.	New York.	United States.	
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
1889 <i>a</i>	6,547,338	3,613,726	8,313,280	18,474,344	20,063,029	39,171,270	}
1890 <i>a</i>	5,717,049	3,811,349	8,882,633	18,411,031	17,861,240	36,872,854	
1891.....	(b)	(b)	(b)	(b)	20,520,000	(b)	
1892.....					21,240,000		
1893.....					22,500,000		
1894.....	13,162,000	12,285,000	9,555,000	35,002,000	25,200,000	60,202,000	}
1895.....	10,140,000	19,402,000	5,616,000	35,158,000	19,800,000	54,958,000	
1896.....	8,825,000	10,920,000	2,340,000	20,085,000	13,500,000	33,585,000	
1897.....	8,775,000	14,625,000	6,240,000	29,640,000	13,500,000	43,140,000	
1898.....	8,677,000	13,894,000	7,059,000	29,630,000	11,430,000	41,060,000	
1899 <i>a</i>	10,124,660	14,675,577	6,813,830	31,614,067	17,332,340	49,209,704	
1899.....	11,505,000	16,049,000	7,020,000	34,574,000	10,440,000	45,014,000	
1900.....	7,020,000	16,185,000	6,630,000	29,835,000	10,080,000	39,915,000	
1901.....	9,360,000	13,845,000	6,630,000	29,835,000	9,000,000	38,835,000	
1902.....	10,335,000	16,965,000	5,850,000	33,150,000	5,850,000	39,000,000	
1903.....	10,920,000	17,550,000	6,825,000	35,295,000	9,000,000	44,295,000	
1904.....	12,285,000	17,550,000	7,410,000	37,245,000	11,880,000	49,125,000	
1905.....	14,235,000	22,191,000	9,750,000	46,176,000	9,360,000	55,536,000	
1906.....	20,475,000	23,985,000	8,775,000	53,235,000	12,060,000	65,295,000		(b)

a Census returns; data for 1890 from Eleventh Census Bulletin No. 143.

b No data.

LOCALIZATION OF PRODUCTION.

IN THE UNITED STATES.

It will be noticed that during the last three census years hop production has become more highly localized than in the earlier census years. The census of 1900 shows that less than 1 per cent of the hops were grown outside of New York, Washington, Oregon, and California. If Table 3 be examined, it will be noticed that the production is localized not only in a few States, but in a few counties of those States.

That the yield is not the determining factor in the localization of hops is evident from the fact that seldom does the highest yield per acre accompany the largest acreage. New York State has the lowest yield of the four leading States, but the highest acreage of all the States. To grow hops successfully the soil must be fertile and mellow, or as it is when suitable for corn; well drained, but not too dry; with climate mild and not subject to extreme heat or cold during the growing season, nor to winds. There are large areas in the United States which could be used for the raising of hops, altogether an area large enough to supply the entire world's trade.

There are problems in connection with hop production besides those of the soil. The second problem is to obtain a sufficient supply of labor during the picking season, as hops must be gathered by hand, and during a few weeks in August and September, and thus a large number of laborers are needed for but a short period. Another problem is the outlay for trellis, setting out the yard, and the drying kiln.

The nearest approach to German methods are those of New York. Here hop yards are small, many of them simply a part of a larger farm, while on the Pacific coast the hop yards are extremely large and the problems connected with them many. In New York the distribution of the hop yards is over a large area on account of their small size; while on the Pacific coast hops are raised in a few well-defined localities. There is probably a large area on the Pacific coast that could be devoted to hops, for the climate is mild and not subject to the severe winds nor to the extremes of temperature that are found in New York.

TABLE 3.—*Area, production, and average yield of hops in those counties producing more than 1,000,000 pounds in 1899, for the census years 1880, 1890, and 1900.*

State and county.	1900. ^a			1890. ^a			1880. ^a		
	Area.	Production.	Average yield.	Area.	Production.	Average yield.	Area.	Production.	Average yield.
California:	<i>Acres.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Acres.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Acres.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Mendocino.....	983	1,418,500	1,443	629	824,721	1,311	279	229,617	823
Sacramento.....	1,224	2,384,600	1,948	963	2,134,606	2,217	402	684,500	1,703
Sonoma.....	2,063	3,118,200	1,511	1,046	1,263,610	1,208	74	66,250	895
Yuba.....	940	1,066,200	1,134	265	538,470	2,032	.....	.....	.....
Rest of State....	1,680	2,137,160	1,272	1,071	1,785,931	1,668	364	463,710	1,274
Total California..	6,890	10,124,660	1,469	3,974	6,547,338	1,648	1,119	1,444,077	1,291
New York:									
Franklin.....	1,584	1,016,300	642	2,930	1,106,123	378	2,075	1,083,850	522
Madison.....	4,932	3,284,100	666	6,956	4,094,440	589	6,076	3,823,963	629
Oneida.....	4,110	2,919,900	710	6,002	3,704,341	617	5,937	4,075,651	686
Otsego.....	7,038	4,115,300	585	7,749	4,698,687	606	9,118	4,441,029	487
Schoharie.....	5,962	3,752,700	629	5,563	3,148,885	566	5,871	2,982,873	508
Rest of State....	3,906	2,244,040	575	7,470	3,310,553	443	9,995	5,221,565	522
Total New York	27,532	17,332,340	630	36,670	20,063,029	547	39,072	21,628,931	554
Oregon:									
Clackamas.....	1,651	1,513,200	917	306	316,871	1,036	26	20,330	782
Marion.....	6,230	5,750,688	922	974	1,169,657	1,201	37	57,580	1,556
Polk.....	2,568	2,633,800	1,026	340	450,148	1,324	35	17,020	486
Yamhill.....	1,801	1,752,845	973	156	144,015	923	8	5,322	665
Rest of State....	3,177	3,025,044	952	1,354	1,533,035	1,132	198	144,119	728
Total Oregon....	15,433	14,675,577	951	3,130	3,613,726	1,155	304	244,371	804
Washington:									
King.....	775	1,032,900	1,333	1,768	3,238,075	1,831	58	97,501	1,681
Pierce.....	1,335	1,710,400	1,281	2,191	3,690,671	1,689	377	510,175	1,353
Yakima.....	2,161	2,913,700	1,348	375	349,680	932	55	57,300	1,042
Rest of State....	1,025	1,156,830	1,129	779	1,025,854	1,317	44	38,301	870
Total Washing- ton.....	5,296	6,813,830	1,287	5,113	8,313,280	1,626	534	703,277	1,317
Rest of United States	462	263,297	570	1,325	633,897	478	5,771	2,525,722	438
United States....	55,613	49,209,704	885	50,212	39,171,270	780	46,800	26,546,378	567

^a The year of growth is the preceding year.

IN EUROPEAN COUNTRIES.

Hops are a localized crop not only in the United States but throughout the world, since only a few countries grow large quantities of hops, and these principally in a few well-defined localities. This is evident when Table 4 is examined.

In Austria hops are grown almost entirely in Bohemia. The average yield for the entire country is low, but among the brewers

the Austrian hops are held in the highest esteem and generally bring higher prices than those from other countries. The hops are grown with a great deal of care. Only female plants are grown in the yards, to secure a hop without seed; special schools have been established to train men in the production of hops; and a hop-growers' society has been formed to guarantee the quality and the origin of the hops. As a result, the Austrian hops have a world-wide reputation for their excellence.

Belgium and France produce small quantities of hops in a few definite localities.

Hop production in Germany is not localized as in other countries. The production is scattered throughout the entire country. Many of the yards contain only a few acres. The hops are gathered by the farmers, dried in the sun, and shipped to central points, where they are further dried and baled. As a result of this method the Germans have obtained a hop of very high quality. It has solved both the labor problem and the drying problem. The average yield per acre is not so large as in France or Belgium, but among the dealers the hops stand high in esteem.

The raising of hops in the United Kingdom presents some of the same problems that are found in the United States. The hops are raised principally in the county of Kent, in large hop yards. There, as well as in the United States, the labor problem has been serious. The yield is higher than on the continent, and the hops have a very good reputation among the English brewers.

TABLE 4.—*Localization of hop production and average yield in the principal hop-producing countries of Europe.*

Country and sub-division.	1905.			1904.			1903.		
	Area.	Production.	Average yield.	Area.	Production.	Average yield.	Area.	Production.	Average yield.
Austria:	<i>Acres.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Acres.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Acres.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Upper Austria.....	2,130	797,632	374	2,017	1,065,494	528	2,017	313,497	155
Styria.....	4,018	1,741,431	433	4,018	1,433,886	357	4,018	1,130,310	281
Bohemia.....	37,560	32,297,712	860	34,570	14,274,927	413	34,224	4,162,326	122
Moravia.....	1,999	1,008,615	505	1,912	816,372	427	1,774	850,102	431
Galicia.....	7,848	3,450,013	440	7,482	1,970,050	263	6,605	2,487,255	377
Other.....	22	9,921	451	22	a 37,479	(b)	22	a 66,800	(b)
Total Austria..	53,577	39,305,324	734	50,021	19,598,208	392	48,860	9,010,290	184
Belgium:									
Brabant—									
Brussels.....	(b)	(b)	(b)	{ 2,132	3,186,662	1,495	2,039	1,498,144	735
Other.....	(b)	(b)	(b)	{ 5	7,941	1,588	5	6,314	1,263
Total Brabant.	(b)	(b)	(b)	2,137	3,194,603	1,495	2,044	1,504,458	736
West Flanders—									
Ypres.....	(b)	(b)	(b)	{ 2,906	5,428,763	1,868	2,683	2,807,231	1,046
Other.....	(b)	(b)	(b)	{ 47	71,568	1,523	35	31,143	890
Total West Flanders.....	(b)	(b)	(b)	2,953	5,500,331	1,863	2,718	2,838,374	1,044
Other.....	(b)	(b)	(b)	707	1,135,546	1,606	716	443,508	619
Total Belgium.	(b)	10,970,000	(b)	5,797	9,830,480	1,696	5,478	4,786,340	874

a Includes hops grown as an intercultural crop, the acreage for which is not included under the acreage for hops.

b No data.

TABLE 4.—*Localization of hop production and average yield in the principal hop-producing countries of Europe—Continued.*

Country and sub-division.	1905.			1904.			1903.		
	Area.	Production.	Average yield.	Area.	Production.	Average yield.	Area.	Production.	Average yield.
France:	<i>Acres.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Acres.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Acres.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Côte d'Or.....	(a)	(a))	(a)	2,370	1,484,152	626	2,293	2,000,033	872
Meurthe et Moselle.				1,529	1,391,778	910	1,804	1,384,723	768
Nord.....				2,824	4,535,789	1,606	2,639	3,569,283	1,353
Other.....				492	341,716	695	462	356,928	773
Total France....	7,386	10,969,538	1,485	7,215	7,753,435	1,075	7,198	7,310,967	1,016
Germany:									
Prussia—									
Posen.....	3,099	1,520,528	491	3,212	496,701	155	3,143	931,673	296
Magdeburg.....	1,105	1,162,938	1,052	1,048	889,124	848	994	557,108	560
Other.....	1,171	847,898	724	1,154	644,632	559	1,124	533,078	474
Total Prussia..	5,375	3,531,364	657	5,414	2,030,457	375	5,261	2,021,859	384
Bavaria—									
Upper Bavaria...	10,858	6,331,895	583	10,144	5,537,790	546	9,625	4,959,518	515
Lower Bavaria..	13,907	8,124,473	584	13,252	7,372,917	556	12,642	6,558,971	519
Upper Palatinate	3,173	1,462,767	461	3,076	1,070,785	348	3,015	944,901	313
Upper Franconia.	5,770	2,884,968	500	5,535	1,987,687	359	5,392	2,105,193	390
Middle Franconia	27,826	14,320,122	515	27,080	9,040,273	334	26,405	9,641,914	365
Other.....	1,196	870,826	728	1,142	638,459	559	1,154	358,031	310
Total Bavaria..	62,730	33,995,051	542	60,229	25,647,911	426	58,233	24,568,528	422
Württemberg—									
Neekar.....	3,128	2,250,258	719	2,913	1,507,741	518	2,891	1,758,627	608
Black Forest....	7,181	4,739,717	660	6,909	4,676,224	677	6,729	4,416,519	656
Danube.....	2,842	2,104,091	740	2,713	1,606,287	592	2,696	1,496,497	555
Other.....	309	151,678	491	307	145,505	474	316	64,596	204
Total Württemberg....	13,460	9,245,744	687	12,842	7,935,757	618	12,632	7,736,239	612
Baden—									
Karlsruhe.....	2,086	2,121,287	1,017	2,009	2,007,749	999	1,987	1,724,676	868
Mannheim.....	1,910	1,550,731	812	1,865	1,332,253	714	1,846	1,386,928	751
Other.....	689	584,446	848	623	621,924	998	605	291,010	481
Total Baden....	4,685	4,256,464	909	4,497	3,961,926	881	4,438	3,402,614	767
Alsace-Lorraine—									
Lower Alsace....	10,354	12,403,644	1,198	9,684	8,803,276	909	9,145	7,999,691	875
Other.....	941	1,009,276	1,073	865	708,786	819	798	781,759	980
Total Alsace-Lorraine....	11,295	13,412,920	1,188	10,549	9,512,062	902	9,943	8,781,450	883
Other.....	88	58,863	669	92	48,061	522	99	51,147	517
Total Germany..	97,633	64,500,406	661	93,623	49,136,174	525	90,606	46,561,837	514
United Kingdom:									
Hants.....	1,978	3,383,184	1,710	1,900	1,023,344	539	1,920	1,976,576	1,029
Hereford.....	6,851	9,945,824	1,452	6,767	1,579,312	233	6,851	4,629,296	676
Kent.....	30,655	49,668,640	1,620	29,841	24,282,384	814	29,933	32,449,088	1,084
Surrey.....	843	1,147,776	1,362	877	281,680	321	901	927,472	1,029
Sussex.....	4,647	7,734,608	1,664	4,474	3,105,312	694	4,454	4,051,936	910
Worcester.....	3,807	5,819,632	1,529	3,752	1,314,432	350	3,697	2,986,816	808
Other.....	186	245,952	1,322	188	34,496	183	182	138,432	761
Total United Kingdom....	48,967	77,945,616	1,592	47,799	31,620,960	662	47,938	47,159,616	984

a No data.

TRADE OF THE UNITED STATES.

The hop trade of the United States has been subject to wide fluctuations during the last twenty-five years, due primarily to the variations in the yield of hops from year to year. More than 90 per cent of the exports of hops from the United States are destined for the United

Kingdom. Nearly one-half of the hops imported into the United Kingdom come from the United States. It can easily be seen that the fluctuations in the trade are dependent upon the production of the two countries; thus a shortage of a crop in the United Kingdom tends to increase the exports from the United States.

Another feature of the export trade is that the large portion of the exported hops not shipped to the United Kingdom go to Australia, British India, and Canada, countries that use comparatively large amounts of hops per barrel of beer brewed and are not particular as to quality.

The increase in the exports of hops has been less in degree than the increase in production. This is due to the rapid rise in beer production, which has increased fivefold within thirty years. In this bulletin ale and porter have been included with beer. How large a percentage these two drinks make of the total beer produced in the United States and other countries can not be ascertained.

The imports of hops have been much smaller than the exports. Only once during the last twenty-five years did the imports into the United States exceed the exports. In 1886 there was an abnormally large quantity of hops imported and scarcely any exports, owing probably to a shortage in the crop at home. The period of the maximum imports was 1885-1889; for the exports, 1895-1899.

TABLE 5.—*Trade and consumption of hops, and quantity of beer brewed, in the United States, 1851-1905.*

Fiscal year beginning July 1.	Imports.		Domestic exports.		Foreign exports.		Quantity of hops consumed by brewers.	Quantity of beer brewed.
	Quan- tity.	Value.	Quan- tity.	Value.	Quan- tity.	Value.		
	Pounds.	Dollars.	Pounds.	Dollars.	Pounds.	Dollars.	Pounds.	U. S. bar- rels (31 gallons).
1851.....	(a)	(a)	238,008	69,042	(a)	(a)	(a)	(a)
1852.....			245,647	40,054				
1853.....			260,026	63,763				
1854.....			4,021,816	1,310,720				
Average, 1851-1854.	(a)	(a)	1,191,374	370,895	(a)	(a)	(a)	(a)
1855.....	(a)	(a)	1,048,515	146,966	(a)	(a)	(a)	(a)
1856.....			924,538	84,852				
1857.....			458,889	41,704				
1858.....			587,953	53,016				
1859.....			273,257	32,866				
Average, 1855-1859.	(a)	(a)	658,630	71,881	(a)	(a)	(a)	(a)
1860.....	(a)	(a)	8,835,837	2,006,053	(a)	(a)	(a)	(a)
1861.....			4,800,046	663,898				
1862.....			8,504,081	1,733,265				
1863.....			5,851,165	1,217,075				
1864.....	3,837	668	3,671,371	1,350,983	(a)	4,326	14,249	(a)
Average, 1860-1864.	(a)	(a)	6,416,500	1,394,255	(a)	(a)	(a)	(a)
1865.....	1,696,681	428,466	349,987	108,752	3,978	517	(a)	(a)
1866.....	865,016	267,102	1,001,603	362,946	238,157	13,852		6,207,402
1867.....	3,585,843	922,023	532,038	264,129	96,318	25,806		6,146,663
1868.....	(a)	58,728	11,269,555	1,627,248	(a)	(a)		6,342,055
1869.....	(a)	76,677	16,356,231	2,515,734	(a)	64,572	(a)	6,574,617
Average, 1865-1869.	(a)	350,599	5,901,883	975,762	(a)	(a)	(a)	(a)

^aNo data.

TABLE 5.—*Trade and consumption of hops, and quantity of beer brewed, in the United States, 1851-1905—Continued.*

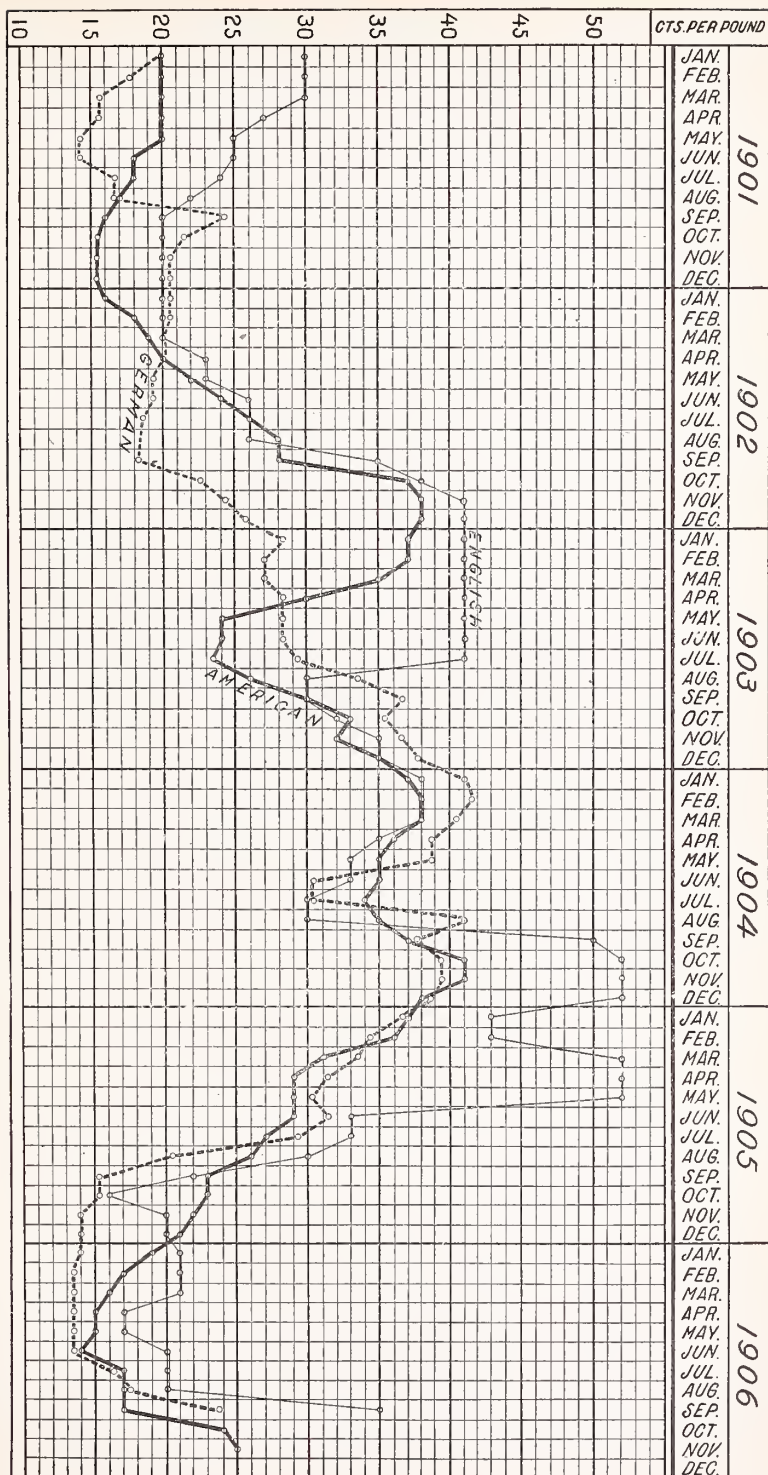
Fiscal year beginning July 1.	Imports.		Domestic exports.		Foreign exports.		Quantity of hops con- sumed by brewers.	Quantity of beer brewed.
	Quan- tity.	Value.	Quan- tity.	Value.	Quan- tity.	Value.		
	<i>Pounds.</i>	<i>Dollars.</i>	<i>Pounds.</i>	<i>Dollars.</i>	<i>Pounds.</i>	<i>Dolls.</i>	<i>Pounds.</i>	<i>U. S. bar- rels (31 gallons).</i>
1870.....		14, 524	3, 273, 653	316, 288		37, 621		7, 740, 260
1871.....		815, 941	3, 061, 244	408, 305		15, 700		8, 659, 427
1872.....	(a)	1, 386, 136	1, 795, 437	272, 403	(a)	53, 855	(a)	9, 633, 323
1873.....		1, 325, 682	117, 358	27, 973		30, 121		9, 600, 897
1874.....		66, 837	3, 066, 703	1, 286, 501		40, 642		9, 452, 697
Average, 1870-1874.	(a)	721, 644	2, 262, 879	462, 294	(a)	35, 588	(a)	9, 017, 321
1875.....		25, 962	9, 191, 589	1, 384, 521	(a)	20, 645		9, 902, 352
1876.....		16, 105	9, 581, 108	2, 305, 355	(a)	9, 551		9, 810, 060
1877.....	(a)	16, 189	18, 458, 782	2, 152, 873	4, 317	885	(a)	10, 241, 471
1878.....		34, 964	5, 458, 159	701, 065	(a)			11, 103, 084
1879.....		161, 452	9, 739, 566	2, 573, 292	13, 310	4, 360		13, 347, 111
Average, 1875-1879.	(a)	50, 934	10, 485, 841	1, 823, 427	(a)		(a)	10, 880, 816
1880.....		497, 243	114, 544	8, 990, 655	2, 016, 970	10, 473		14, 311, 028
1881.....		955, 854	302, 112	5, 867, 363	1, 456, 786	95, 469		16, 952, 085
1882.....	2, 122, 589	1, 579, 003	7, 817, 228	5, 616, 370	98, 452	62, 631	(a)	17, 757, 892
1883.....		701, 104	304, 297	13, 516, 643	3, 265, 211	52, 957		18, 998, 619
1884.....		1, 642, 086	433, 706	7, 055, 289	1, 391, 854	13, 616		19, 185, 953
Average, 1880-1884.		1, 183, 775	546, 732	8, 649, 436	2, 749, 438	54, 193		17, 441, 115
1885.....		2, 672, 762	444, 989	13, 665, 661	1, 714, 488	45, 900	6, 582	20, 710, 933
1886.....		18, 538, 049	3, 404, 669	260, 721	54, 970	437, 279		23, 121, 526
1887.....		5, 585, 033	1, 017, 495	6, 793, 818	1, 203, 060	408, 643	59, 774	24, 680, 219
1888.....		4, 176, 158	1, 155, 472	12, 589, 262	2, 823, 832	284, 344	49, 186	25, 119, 853
1889.....		6, 539, 516	1, 053, 616	7, 540, 854	1, 110, 571	418, 399	63, 667	27, 561, 944
Average, 1885-1889.		7, 502, 304	1, 415, 248	8, 170, 063	1, 381, 384	318, 913	49, 659	24, 238, 895
1890.....		4, 019, 603	1, 797, 406	8, 736, 080	2, 327, 474	222, 938	57, 526	30, 497, 209
1891.....		2, 506, 224	883, 701	12, 604, 686	2, 420, 502	176, 417	51, 008	31, 856, 626
1892.....		2, 691, 244	1, 085, 407	11, 367, 030	2, 695, 867	85, 804	25, 328	34, 591, 179
1893.....		828, 022	484, 415	17, 472, 975	3, 844, 232	31, 120	12, 472	33, 362, 373
1894.....		3, 133, 664	599, 744	17, 523, 388	1, 872, 597	92, 614	14, 938	33, 589, 784
Average, 1890-1894.		2, 635, 751	970, 135	13, 540, 832	2, 632, 134	121, 779	32, 254	32, 779, 434
1895.....		2, 772, 045	600, 419	16, 765, 254	1, 478, 919	32, 356	5, 432	35, 859, 250
1896.....		3, 017, 821	629, 987	11, 426, 241	1, 304, 183	57, 114	9, 142	34, 462, 822
1897.....		2, 375, 922	648, 155	17, 161, 669	2, 642, 779	36, 921	7, 084	37, 529, 339
1898.....		1, 319, 319	591, 755	21, 145, 512	3, 626, 144	22, 746	6, 004	36, 697, 634
1899.....		2, 589, 725	713, 701	12, 639, 474	1, 707, 660	35, 408	7, 507	39, 471, 593
Average, 1895-1899.		2, 414, 966	636, 803	15, 827, 630	2, 151, 937	36, 909	7, 034	36, 804, 128
1900.....		2, 606, 708	851, 008	14, 963, 676	2, 466, 515	26, 738	6, 278	40, 614, 258
1901.....		2, 805, 293	833, 702	10, 715, 151	1, 550, 657	29, 620	6, 198	44, 550, 127
1902.....		6, 012, 510	1, 808, 491	7, 794, 705	1, 909, 951	55, 321	14, 422	46, 720, 179
1903.....		2, 758, 163	1, 374, 327	10, 985, 988	2, 116, 180	35, 348	9, 461	48, 265, 168
1904.....		4, 339, 379	1, 980, 804	14, 858, 612	4, 480, 660	17, 600	6, 245	49, 522, 029
Average, 1900-1904.		3, 704, 411	1, 369, 666	11, 863, 626	2, 504, 794	32, 925	8, 521	45, 934, 352
1905.....		10, 113, 989	2, 326, 982	13, 026, 904	3, 125, 843	32, 454	5, 668	54, 724, 553

a No data.

b Census figures.

PRICES.

The prices of hops are subject to very wide fluctuations. The quantity of hops required by the world is almost constant, and changes are gradual; therefore a shortage or abundance in the crop is reflected at once in the prices. The accompanying diagram is a graphic representation of the prices for selected grades of hops in the London, Nuremberg, and New York markets, as given in Table 6. The American price is the high price for choice New York State hops, the German price covers the grade known as Württemberg, and the



FLUCTUATIONS IN PRICES OF HOPS, 1901-1906.

London price is for the high-priced English hops. These prices must not be compared to show in what market the best prices are paid, for they cover different grades. The diagram serves simply to show fluctuations. Thus the shortage of the crop in the United Kingdom in 1902 and 1904 is reflected by the exceedingly high prices during the months following the coming of the crop upon the market in September. The exceedingly large crop in 1905 brought down the prices again during the latter part of that year. The apparent irregularity in the prices of English hops for the first half of 1905 is alleged to be due to the formation of a hop pool which was successful in controlling prices for a few months.

Two factors that influence prices are the demand at home and the demand abroad. It will be noticed that in the hop-crop year 1902 German prices did not rise as rapidly as the English or American prices. This is probably due to two influences: First, since the surplus of American hops is sold upon the English market, English prices would be reflected quickly in the price at New York; and, second, the large crop in Germany tended to keep down the price in that country. In 1904 the crop was exceedingly short in the United Kingdom, and again the American price for a time rose to a higher figure than the German price. This shortage was not world-wide, so naturally the prices fell, especially when the largeness of the next year's crop began to be anticipated. Another feature of the diagram is the reflection of the condition of the coming crop in the prices preceding the harvest.

In Table 6 the prices given for the United States are quoted from the Yearbook of the Department of Agriculture, for Germany from the Vierteljahrshefte zur Statistik des Deutschen Reichs, and for the United Kingdom from the London Economist.

TABLE 6.—Wholesale prices of hops per pound in London, in leading cities of the United States, and in Nuremberg, 1901-1906.

Year and month.	London.						New York.		Cincinnati.		Chicago.		Nuremberg.		
	Old.		English.		Foreign.		Choice State.		Choice.		Pacific coast, common to choice.		Market.	Würtemberg.	Spalt.
	Low.	High.	Low.	High.	Low.	High.	Low.	High.	Low.	High.	Low.	High.			
1901.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
January.....	11	17	21	30	(a)		17	20	17 ³ / ₄	17 ³ / ₄	17	18	17.8	20.0	24.3
February.....	11	17	21	30			18	20	17 ³ / ₄	17 ³ / ₄	17	18	16.2	17.8	22.7
March.....	11	17	20	30			18	20	17 ³ / ₄	17 ³ / ₄	18	19	14.0	15.7	21.6
April.....	11	15	20	27			18	20	17 ³ / ₄	17 ³ / ₄	18	19	14.0	15.7	21.6
May.....	11	15	20	25			17 ³ / ₄	20	17 ³ / ₄	17 ³ / ₄	18	19	13.0	14.6	20.5
June.....	9	15	15	25			17 ³ / ₄	18	17 ³ / ₄	17 ³ / ₄	17	18	13.0	14.6	20.5
July.....	9	14	15	24			16	18	17 ³ / ₄	17 ³ / ₄	17	18	15.7	16.7	22.7
August.....	7	17	11	22			14	17	17 ³ / ₄	17 ³ / ₄	15	16	15.7	16.7	(a)
September.....	9	17	7	20			13	16	17 ³ / ₄	17 ³ / ₄	14	15	21.6	24.2	32.4
October.....	9	13	7	20			14	15 ¹ / ₂	14	12 ¹ / ₂	14	18.4	21.6	29.1	
November.....	9	13	7	20			14	15 ¹ / ₂	13 ³ / ₄	13 ³ / ₄	12 ¹ / ₂	14	16.7	20.5	24.8
December.....	9	13	7	20			14	15 ¹ / ₂	14	14	13	15	16.7	20.5	24.8

a No date.

TABLE 6.—*Wholesale prices of hops per pound in London, in leading cities of the United States, and in Nuremberg, 1901-1906—Continued.*

Year and month.	London.						New York.		Cincinnati.		Chicago.		Nuremberg.		
	Old.		English.		Foreign.		Choice State.		Choice.		Pacific coast, common to choice.		Market.	Würtemberg.	Spalt.
	Low.	High.	Low.	High.	Low.	High.	Low.	High.	Low.	High.	Low.	High.			
1902.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
January.....	9	13	7	20	(a)	20½	14	16	14½	14½	12½	14	16.7	20.5	24.8
February.....	9	13	7	20			14½	18	15½	15½	15	16	16.2	20.5	24.3
March.....	9	13	8	20			17	19	17½	17½	13	16½	15.7	20.0	23.7
April.....	9	13	8	23			18	20	18½	18½	15	18	15.7	20.0	23.2
May.....	9	13	9	23			19	22	19½	19½	15	20	15.1	19.4	22.7
June.....	9	13	9	26			20½	24	21½	21½	15	20	15.1	19.4	22.7
July.....	9	13	9	26			22	26	23	23	20	22	15.1	18.9	(a)
August.....	9	13	9	26			24½	28	25	25	22	25	14.0	(a)	(a)
September.....	9	26	11	35			26	28	26½	26½	25	26	14.0	18.4	21.6
October.....	17	26	26	38			32	37	29½	29½	26	29	19.4	22.7	27.0
November.....	17	26	26	41			35	38	30	30	26	30	21.6	24.3	28.1
December.....	17	26	28	41			35	38	30	30	29	31	23.8	25.9	29.1
1903.											Good to choice.				
January.....	20	26	28	41	(a)	20½	35	37	29	29	27	31	27.0	28.1	30.2
February.....	20	26	28	41			33	37	29	29	27	31	25.9	27.0	30.2
March.....	20	26	28	41			30	35	29½	29½	25	29	26.4	27.0	30.2
April.....	20	26	28	41			23	30	25	25	20	25	27.0	28.1	31.3
May.....	20	26	28	41			23	24	25	25	20	24	27.0	28.1	31.3
June.....	20	26	28	41			22½	24	24	24	22	24	27.0	28.1	(a)
July.....	9	26	26	41			20½	23½	24	24	19	22	28.1	29.1	(a)
August.....	9	13	26	30			20½	26	24	24	21	25	31.3	33.5	(a)
September.....	24	30	17	30			24½	30	25	25	26	28	34.5	36.7	49.7
October.....	24	30	20	32			30	33	26	26	20	27	32.4	35.6	47.5
November.....	24	32	21	35			30	32	26	26	24	26	33.5	36.7	47.5
December.....	26	32	24	35			30	35	27	27	24	27	34.5	37.8	47.5
1904.															
January.....	26	30	26	38	27	52	34	37	28	31	28½	34	36.7	41.0	49.7
February.....	26	30	30	38	30	52	36	38	31	34	30	35	37.8	41.6	49.7
March.....	28	30	30	38	30	52	34	38	30	32	32	34	36.7	40.5	48.6
April.....	13	30	26	35	26	52	33	36	30	32	30	34	35.6	38.9	
May.....	13	22	28	33	26	43	33	35	29	31	30	35	36.7	38.9	
June.....	13	22	26	33	26	43	32	35	29	30	30	32	29.1	30.2	(a)
July.....	13	22	26	30	26	43	32	34	29	30	30	31	29.1	30.2	
August.....	13	22	26	30	26	43	32	35	29	29	30	34	33.5	41.0	
September.....	30	39	25	50	26	43	33	37	29	31	28½	31	34.5	37.8	42.1
October.....	35	43	33	52	30	52	35	41	31	36	30	35½	37.8	39.4	43.2
November.....	39	41	35	52	35	52	36	41	36	37	32	37	37.2	39.4	43.2
December.....	35	41	39	52	35	52	35	38	34	36	33	37	36.7	38.9	42.1
1905.															
January.....	33	39	36	43	30	46	34	37	33	33	30	34	34.5	36.7	41.0
February.....	28	37	30	43	26	43	30	36	31½	31½	26	30	31.3	34.4	36.7
March.....	26	39	28	52	25	39	27	31	30	30	26	30	30.2	33.5	35.6
April.....	26	35	29	52	25	39	27	29	29	29	26	29	28.1	31.3	34.5
May.....	26	30	26	52	24	39	27	29	29	29	26	28	27.0	30.2	32.4
June.....	26	30	26	33	24	35	26	29	28	28	21	25	29.1	31.3	34.6
July.....	24	30	26	33	24	35	25	27	24	24	20	24	25.9	29.1	(a)
August.....	15	28	17	30	17	35	22	26	22	22	18	23	18.4	20.5	
September.....	11	20	9	22	9	26	20	23	18½	18½	15	18	10.8	15.1	18.3
October.....	9	17	9	16	9	22	19	23	17	17	10	15	9.7	15.1	18.3
November.....	9	13	9	20	9	22	13	22	14½	14½	12	15	9.7	14.0	17.3
December.....	9	13	9	20	9	22	16	21	13½	13½	10	14	9.2	14.0	17.3
1906.															
January.....	9	13	11	21	9	22	15	19	13	14½	12	14	9.2	14.0	17.3
February.....	9	13	11	21	9	22	14	17	13	14½	12	14	9.2	13.5	16.7
March.....	11	13	9	21	11	22	13	16	12	14	12	14	9.2	13.5	16.7
April.....	11	13	9	17	11	22	12	15	12	17	13	17	9.2	13.5	16.7
May.....	11	13	9	17	11	22	11	15	12	15	13	15	9.2	13.5	16.7
June.....	11	13	9	20	11	22	11	14	12	15	12	14	9.7	13.5	16.7
July.....	11	13	11	20	11	22	12	17	12	17½	14	17	13.0	16.2	17.3
August.....	11	15	12	20	11	22	15	17	17	18	12	18	15.1	17.3	(a)
September.....	13	23	17	35	15	26	15	17	14	18	12	17	18.4	23.8	27.0
October.....	17	23	24	35	15	22	22	25	18	17	18	14	17.3	23.8	25.9
November.....	13	33	21	35	14	26	23	25	18½	17½	18	13	19.4	24.8	25.9
December.....	13	22	22	32	17	29	21	24	18½	17½	18	12	20.5	24.8	(a)

a No data.

TRADE, PRODUCTION, AND CONSUMPTION OF HOPS IN FOREIGN COUNTRIES.

COUNTRIES WITH A SURPLUS.

GERMANY.

Germany exports nearly as much hops as Austria-Hungary and the United States combined. In the period 1885-1889 the exports of hops were at their height. It was during this period that the acreage and production were largest. Since this period both the trade and the production have decreased.

The trade returns show that German hops are shipped to many countries, but mainly to Belgium, France, the United Kingdom, and the United States. Since the hops from the United States are shipped only in small quantities to either Belgium or France, the Germans have this trade practically to themselves. The only countries in which the German and American hops come into competition in the same markets are the United Kingdom and the United States.

The Continental people are more fanciful about the quality of hops used in their beer than the English, so the American hops have not been able to gain much of a foothold on the Continent. By improvement of quality the American hops should be able to win their way into those Continental markets in which the Germans have the trade entirely to themselves.

Another characteristic of the German trade is that the exports do not fluctuate so widely as in the other large producing countries. This is probably due to a more constant production, the result of superior methods of cultivation.

The import trade, however, during the last twenty-five years has shown an almost constant increase and has been subject to wide fluctuations. Since most of the hops imported into Germany come from Austria-Hungary, the fluctuations in the trade are dependent upon the production of the latter country. The years of large importation into Germany correspond very closely with the years of large production and exportation from Austria-Hungary.

The consumption of hops in Germany has undergone marked changes during the last twenty years. The returns show that the consumption per barrel of beer brewed has decreased from 0.95 of a pound in 1880-1884 to 0.5 of a pound in 1900-1904.

TABLE 7.—*Trade, production, acreage, and consumption of hops, and quantity of beer brewed, in Germany, a 1878-1905.*

Calendar year.	Imports.	Exports.	Area.	Production.	Consumption (production+ imports— exports).	Beer brewed. ^b
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Acres.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>U. S. barrels (31 gallons).</i>
	(c)				(c)	
1878.....		19,731,367	100,843	62,961,138		33,074,734
1879.....		17,526,745	100,561	37,708,957		31,738,485
Average, 1878-1879.....	(c)	18,629,056	100,702	50,335,048	(c)	32,406,610
1880.....	3,139,602	23,976,807	96,492	51,098,827	30,861,622	32,871,058
1881.....	2,604,100	19,097,538	98,881	52,619,477	36,126,039	33,328,690
1882.....	3,547,898	26,659,832	99,650	40,231,045	17,119,111	33,511,913
1883.....	3,735,732	16,540,617	113,512	48,898,957	36,094,072	34,831,971
1884.....	2,954,414	25,382,915	115,333	63,047,437	41,218,936	36,111,123
Average, 1880-1884.....	3,196,349	22,331,542	104,774	51,419,149	32,283,956	34,130,951
1885.....	3,053,181	27,938,513	117,066	73,195,875	48,310,543	35,670,535
1886.....	2,692,284	38,850,951	117,053	66,585,096	30,426,429	38,406,950
1887.....	2,917,817	30,196,928	116,020	53,778,226	26,499,115	40,138,620
1888.....	2,780,910	24,519,365	114,775	49,249,051	27,510,596	40,646,531
1889.....	4,237,945	28,652,149	113,166	78,887,548	54,473,344	44,672,324
Average, 1885-1889.....	3,136,427	30,031,581	115,616	64,339,159	37,444,005	39,906,992
1890.....	2,981,090	26,340,903	109,974	54,522,507	31,172,694	45,021,726
1891.....	4,006,233	21,728,975	107,836	48,378,666	30,655,930	45,341,301
1892.....	3,403,716	20,138,120	107,327	54,045,426	37,311,022	46,683,516
1893.....	9,414,397	12,173,261	103,944	23,456,958	20,698,094	47,401,921
1894.....	5,346,208	24,085,275	104,285	72,993,491	54,254,424	47,185,462
Average, 1890-1894.....	5,030,330	20,891,307	106,673	50,679,410	34,818,433	46,326,785
1895.....	4,487,503	23,831,082	103,967	66,537,917	47,194,343	51,724,279
1896.....	7,754,978	22,441,950	100,571	55,832,052	41,145,080	52,513,416
1897.....	5,894,939	21,827,081	97,668	52,005,367	36,673,225	56,567,332
1898.....	5,259,126	16,375,050	95,728	48,207,808	37,091,884	57,922,330
1899.....	6,771,496	16,970,739	89,311	50,127,593	39,928,350	59,227,900
Average, 1895-1899.....	6,033,609	20,289,180	97,449	54,662,147	40,406,576	55,591,051
1900.....	5,988,415	21,270,854	91,900	48,021,958	32,739,519	60,384,335
1901.....	15,390,025	14,528,459	92,679	27,599,222	28,460,788	60,639,995
1902.....	6,004,068	22,702,756	90,764	50,185,133	33,486,445	57,693,088
1903.....	2,992,995	22,003,671	90,606	46,561,837	27,551,161	58,781,347
1904.....	5,346,208	24,358,207	93,623	49,136,174	30,124,175	59,859,380
Average, 1900-1904.....	7,144,342	20,972,789	91,914	44,300,865	30,472,418	59,471,629
1905.....	9,047,989	22,855,096	97,633	64,500,405	50,693,298	62,001,598

^a Not including free ports.^b Year beginning April 1; including Luxemburg.^c No data.

AUSTRIA-HUNGARY.

Austria-Hungary is another country which produces more hops than it consumes. The average 1900-1904 exports from Austria-Hungary and the United States are about equal, while the imports into the United States are about twice as large as the imports into Austria-Hungary. More than one-half of the exports from Austria-Hungary go to Germany.

During the last thirty years the acreage and the production of Austria have more than doubled. During the same period the beer production has increased more than 80 per cent. The absence of figures for the production of hops in Hungary makes it impossible to obtain the consumption, but the fact that the exports of hops from Austria-Hungary have not increased as fast as the production in

Austria alone would tend to show that the consumption for the entire country has been increasing. The rise in the beer production would require a much larger amount of hops.

The exports from Austria-Hungary indicate that the consumption has not kept pace with the production, as they have more than doubled between 1875-1879 and 1900-1904. This increase in the exports is reflected in the trade with Germany.

TABLE 8.—*Trade, production, acreage, and consumption of hops, and quantity of beer brewed, in Austria-Hungary, 1875-1905.*

Calendar year.	Imports.	Domestic exports.	Austria.		Hungary.		Total production.	Consumption (production+imports-exports).	Beer brewed. ^a		
			Area.	Production.	Area.	Production.					
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Acres.</i>	<i>Pounds.</i>	<i>Acres.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>U. S. bbls. (31 galls.).</i>		
1875.....	2,447,351	6,531,413	(b)	10,122,301	(b)	(b)	(b)	(b)	c 9,946,263		
1876.....	4,289,974	2,739,684		3,140,043							
1877.....	2,456,390	4,377,277		10,633,112							
1878.....	3,586,259	3,423,558		6,905,317							
1879.....	1,169,111	7,269,962		10,208,282							
Average, 1875-1879.....	2,789,817	4,868,379	(b)	8,201,811	(b)	(b)	(b)	(b)	c 9,344,247		
1880.....	1,706,157	6,770,174	(b)	12,817,452	(b)	(b)	(b)	(b)	10,184,816		
1881.....	3,323,247	3,707,733		10,372,747							
1882.....	1,565,502	8,273,946		10,362,385							
1883.....	4,555,190	3,117,336		8,637,489							
1884.....	2,950,225	5,278,306		30,949						8,832,598	
Average, 1880-1884.....	2,820,064	5,429,499	(b)	10,204,534	(b)	(b)	(b)	(b)	10,664,610		
1885.....	1,464,751	7,039,579	(b)	12,796,508	(b)	(b)	(b)	(b)	10,698,354		
1886.....	1,969,609	5,660,369		35,978						10,852,252	
1887.....	2,388,047	6,362,098		36,092						13,807,107	
1888.....	1,550,731	7,139,889		35,702						12,771,816	
1889.....	1,284,854	6,839,619		35,637						15,132,084	
Average, 1885-1889.....	1,731,598	6,608,311	(b)	13,071,953	(b)	(b)	(b)	(b)	11,319,059		
1890.....	1,310,868	5,888,104	(b)	12,419,738	(b)	(b)	(b)	(b)	12,513,042		
1891.....	1,174,182	7,250,120		36,697						12,955,902	
1892.....	1,907,659	5,389,860		36,875						14,311,038	
1893.....	2,332,931	8,407,106		37,641						13,516,097	
1894.....	2,833,160	7,825,526		38,064						19,753,193	
Average, 1890-1894.....	1,911,700	6,952,143	(b)	14,591,194	(b)	(b)	(b)	(b)	14,561,565		
1895.....	3,412,314	6,302,353	(b)	17,168,053	(b)	d 641,843	17,809,896	14,919,857	17,297,904		
1896.....	1,524,937	10,552,644		42,260		21,937,753	941	690,708	22,628,461	13,600,754	17,604,393
1897.....	2,745,195	8,174,077		42,448		14,021,396	907	652,568	14,673,964	9,245,082	17,735,176
1898.....	1,811,979	8,357,722		43,569		13,819,453	966	606,492	14,425,945	7,880,202	18,015,836
1899.....	1,216,070	11,111,295		43,602		23,895,677	976	608,917	24,504,594	14,609,369	18,297,510
Average, 1895-1899.....	2,142,099	8,899,618	(b)	18,168,466	(b)	640,106	18,808,572	12,051,053	17,790,064		
1900.....	777,570	9,809,466	(b)	19,864,747	(b)	1,117	588,193	20,452,940	11,421,044	18,338,531	
1901.....	608,476	22,397,416		46,967		32,866,284	1,035	559,974	33,426,258	11,637,318	17,781,784
1902.....	1,025,811	11,497,765		48,467		19,829,032	1,048	630,742	20,459,774	9,987,820	17,507,287
1903.....	4,481,556	5,900,230		48,860		9,010,290	1,320	807,994	9,818,284	8,399,610	18,183,537
1904.....	2,109,162	10,037,424		50,021		19,598,208	(b)	c 631,000	20,229,208	12,300,946	c 16,275,776
Average, 1900-1904.....	1,800,515	11,928,460	(b)	20,233,712	(b)	643,581	20,877,293	10,749,348	17,617,383		
1905.....	1,187,189	18,777,206	(b)	39,305,324	(b)	d 641,843	39,947,167	22,357,150	(b)		

^a Year beginning September 1.

^b No data.

^c Austria only.

^d Average, 1896-1903.

^e Unofficial estimate.

RUSSIA.

The hop trade of Russia shows that it is a country with a small surplus. Official statistics of production are not available, but commercial estimates show that Russia produces annually about 11,000,000 pounds of hops, of which more than 10,000,000 are consumed at home. Returns from brewers show that less than 4,000,000 pounds annually are used in breweries. This leaves more than 6,000,000 pounds to be consumed in other ways. In Russia large quantities of home-made beverages are produced, which probably accounts for the difference between the two consumption figures. These home-made drinks are fermented, slightly alcoholic beverages, known as "kvass" and "miod."

TABLE 9.—*Trade, production, and consumption of hops, and quantity of beer brewed, in Russia, 1890–1905.*

Calendar year.	Imports.	Domestic exports.	Production.	Consumption (production+ imports— exports).	Hops consumed by breweries.	Beer brewed in breweries.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>U. S. bbls. (31 gals.).</i>
1890.....	1,425,517	248,312	(a)	(a)	(a)	(a)
1891.....	923,290	1,894,947				(a)
1892.....	666,751	1,264,237				4,384,937
1893.....	239,175	4,214,833				3,935,869
1894.....	1,795,998	817,413				4,289,569
Average, 1890–1894.....	1,010,140	1,687,948	(a)	(a)	(a)	b 4,203,458
1895.....	1,234,805	2,429,814	(a)	(a)	(a)	4,065,192
1896.....	1,110,216	1,746,559			3,704,632	4,570,237
1897.....	1,031,237	2,833,880			3,899,388	4,819,737
1898.....	849,153	2,086,164			3,714,454	4,578,612
1899.....	1,208,945	999,350			3,984,831	5,038,355
Average, 1895–1899.....	1,084,691	2,019,153	(a)	(a)	c 3,825,826	4,614,427
1900.....	1,088,945	1,450,543	(a)	(a)	3,943,879	5,002,942
1901.....	872,016	2,128,507	11,000,000	9,743,419	3,830,521	4,893,942
1902.....	945,289	1,400,129	11,000,000	10,545,160	3,433,172	4,861,419
1903.....	807,085	1,744,212	12,500,000	11,562,873	(a)	(a)
1904.....	1,363,547	1,117,294	8,700,000	8,946,253		
Average, 1900–1904.....	1,015,376	1,568,155	d 10,800,000	d 10,247,221	e 3,735,857	e 4,919,434
1905.....	f 1,191,722	f 1,083,384	14,500,000	14,608,338	(a)	(a)

a No data.

b Average, 1892–1894.

c Average, 1896–1899.

d Average, 1901–1904.

e Average, 1900–1902.

f Preliminary data.

NEW ZEALAND.

Although New Zealand produces more hops than are consumed at home, it does not have a large enough surplus to influence the world's market to any extent. There has been during the last fifteen years a considerable increase both in the exports and in the consumption of hops. A striking feature of Table 10 is the large quantity of hops consumed when compared with the amount of beer brewed.

TABLE 10.—*Trade, production, and consumption of hops, and quantity of beer brewed, in New Zealand, 1890–1905.*

Calendar year.	Imports.	Domestic exports.	Production. ^a	Consumption (production + imports – exports).	Beer brewed.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>U. S. barrels (31 gallons).</i>
1890.....	47,375	214,816	(b)	(b)	180,970
1891.....	29,706	296,352	697,000	430,354	176,779
1892.....	40,457	237,888	(b)	(b)	183,930
1893.....	47,460	186,704	770,000	630,756	188,608
1894.....	42,943	224,560	846,300	664,683	186,045
Average, 1890–1894.....	41,588	232,064	c 771,100	c 580,624	183,266
1895.....	72,119	291,536	858,500	639,083	191,039
1896.....	80,422	251,552	384,000	212,870	208,321
1897.....	125,818	302,736	813,000	636,082	222,184
1898.....	149,232	102,480	921,000	967,752	232,708
1899.....	135,901	697,536	1,032,000	470,365	242,308
Average, 1895–1899.....	112,698	529,168	801,700	585,230	219,312
1900.....	108,649	322,112	1,083,000	869,537	263,597
1901.....	89,475	481,376	1,000,000	608,099	276,119
1902.....	66,226	482,832	930,000	513,394	277,841
1903.....	80,925	433,776	940,000	587,149	292,386
1904.....	73,152	644,336	1,150,000	578,816	301,337
Average, 1900–1904.....	83,685	472,886	1,020,600	631,399	282,256
1905.....	(b)	369,712	1,120,000	(b)	301,711

^a Unofficial estimate.^b No data.^c Average, 1891, 1893, and 1894.

COUNTRIES PARTIALLY OR WHOLLY DEPENDENT UPON FOREIGN HOPS.

UNITED KINGDOM.

More hops are consumed in the United Kingdom than in any other country in the world. The average total production is slightly smaller than that of the United States and slightly larger than that of Germany, but in spite of this large production more hops are imported than by any other country. The imports for the last twenty years have remained practically constant, with an average for the entire period slightly above 20,000,000 pounds. The production, however, is declining. This is especially noticeable in the acreage, which has decreased one-fourth between the periods 1885–1889 and 1900–1904.

During the last five years the United States has supplied nearly one-half of the imports of hops into the United Kingdom. Belgium is credited with the next largest amount, and Germany and the Netherlands with the remainder. The hops coming from Belgium and the Netherlands are partially reexports, probably coming originally from Germany. The United Kingdom is the only large market where American hops are sold in large quantities along with those from other countries. The principal reason for their success upon this market is that the English brewers do not object to using large-sized hops containing seed. In Continental markets these are considered objectionable features.

Although the total quantity of beer brewed has increased, the consumption of hops has decreased, because of the smaller proportion of hops used in making beer, which has decreased from 1.9 pounds per barrel in 1885-1889 to 1.27 pounds in 1900-1904. The quantity of hops used per barrel is much larger in the United Kingdom than in the other large beer-brewing countries. Hops are added in beer brewing to the boiling wort for the purpose of imparting (1) tannin, which aids in eliminating undesirable albumenoids; (2) hop oil, which gives to beer its hop aroma; and (3) hop resin, which gives the bitter taste and further tends to preserve the beer. The use of large quantities of hops in English beer is probably explained by the desire for this bitter taste; by the use of a poorer quality of hops than those used in Austria and Germany; and by the larger consumption of porter and ale.

TABLE 11.—*Trade, production, acreage, and consumption of hops, and quantity of beer brewed, in the United Kingdom, 1885-1905.*

Calendar year.	Imports. ^a	Domestic exports.	Area.	Production.	Consumption (production + imports - exports).	Beer brewed.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Acres.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>U. S. bbls. (31 galls.).</i>
1885.....	29,073,856	794,528	71,327	57,027,040	85,306,368	38,477,791
1886.....	11,600,736	2,143,904	70,127	86,928,128	96,384,960	38,531,561
1887.....	14,546,224	1,401,680	63,706	51,241,680	64,386,224	39,363,714
1888.....	23,529,408	928,368	58,490	31,504,592	54,105,632	39,611,544
1889.....	21,463,232	1,152,816	57,724	55,754,832	76,065,248	42,377,763
Average, 1885-1889.....	20,042,691	1,284,259	64,275	56,491,254	75,249,686	39,672,475
1890.....	20,350,176	690,368	53,961	31,766,448	51,426,256	44,375,634
1891.....	21,424,368	645,456	56,142	48,912,192	69,691,104	44,935,119
1892.....	20,454,784	649,376	56,259	46,285,008	66,090,416	44,690,342
1893.....	22,097,600	1,297,408	57,564	46,472,048	67,272,240	44,733,407
1894.....	20,342,896	1,491,504	59,535	71,326,752	90,178,144	44,923,250
Average, 1890-1894.....	20,933,965	954,822	56,692	48,952,490	68,931,633	44,731,550
1895.....	23,993,984	1,136,240	58,940	61,980,352	84,838,096	45,631,115
1896.....	22,875,216	1,176,560	54,217	50,757,056	72,455,712	47,939,327
1897.....	17,857,168	1,207,248	50,863	46,041,632	62,691,552	49,222,839
1898.....	26,510,624	1,450,960	49,735	39,963,392	65,023,056	50,437,669
1899.....	19,816,832	1,266,720	51,843	74,073,776	92,623,888	52,137,969
Average, 1895-1899.....	22,210,765	1,247,546	53,120	54,563,242	75,526,461	49,073,784
1900.....	21,829,696	1,679,888	51,308	38,964,128	59,213,936	51,112,299
1901.....	12,447,232	2,037,504	51,127	72,731,344	83,141,072	50,375,060
1902.....	20,593,888	1,767,920	48,031	34,836,592	53,662,560	49,974,882
1903.....	11,876,032	2,499,504	47,938	47,159,616	56,536,144	49,536,397
1904.....	34,437,312	1,554,336	47,799	31,620,960	64,593,936	48,524,369
Average, 1900-1904.....	20,236,832	1,907,830	49,241	45,062,528	63,391,530	49,904,601
1905.....	11,147,584	1,820,448	48,967	77,945,616	87,272,752	47,188,600

^a General imports, less exports of foreign hops.

BELGIUM.

During the last sixteen years the total imports and exports of hops by Belgium have shown an excess of about 8,000,000 pounds in favor of the imports. That Belgium produces nearly as much hops as are consumed at home is evident when the average production and consumption for the period 1900-1904 are compared. There is but a slight difference between the two.

The exact proportion of the imports that are reexported can not be ascertained, but it is probably large. Large quantities of hops from Belgium are shipped to the United Kingdom and become the most serious competitor in the foreign hop trade of the United States. Their quality is generally considered to be much below that of the hops of Germany and Austria-Hungary, but the receipts in the United Kingdom show that more hops come from Belgium than directly from these two countries. Belgium, including reexports, ranks next to the United States in contributing imports into the United Kingdom.

TABLE 12.—*Trade, production, and consumption of hops, and quantity of beer brewed, in Belgium, 1890-1905.*

Calendar year.	Imports.	Exports.	Production.	Consumption (production + imports - exports).	Beer brewed.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>U. S. barrels (31 gallons).</i>
1890.....	3,465,558	4,993,094	(a)	(a)	9,178,755
1891.....	3,280,039	5,015,846			9,178,307
1892.....	3,299,977	4,358,968			9,312,104
1893.....	2,508,950	6,689,919			9,700,882
1894.....	5,730,871	3,681,450			9,843,753
Average, 1890-1894.....	3,657,079	4,947,855	(a)	(a)	9,442,760
1895.....	3,924,785	2,607,980	(a)	(a)	10,422,668
1896.....	4,347,914	2,794,347			10,889,089
1897.....	4,017,617	3,127,550			11,237,366
1898.....	4,971,136	3,604,982			11,680,971
1899.....	4,438,625	3,086,255			12,177,537
Average, 1895-1899.....	4,340,015	3,044,223	(a)	(a)	11,281,526
1900.....	5,193,064	1,918,583	6,086,853	9,361,334	12,456,211
1901.....	3,814,620	2,259,211	9,149,413	10,704,822	12,493,533
1902.....	4,427,816	3,659,302	7,360,369	8,128,883	12,298,454
1903.....	6,478,233	3,438,251	4,786,340	7,826,322	12,616,218
1904.....	4,826,301	9,665,294	9,830,480	4,991,487	13,052,823
Average, 1900-1904.....	4,948,007	4,188,128	7,442,691	8,202,570	12,583,448
1905.....	6,617,221	2,582,318	11,281,000	15,315,903	13,421,857

^a No data.

FRANCE.

Although France produces a considerable quantity of hops, large supplies are imported to satisfy the additional demands. The larger part of the imports come from Germany and Belgium. The United States apparently ships no hops to France. During the last sixteen years the hop industry has apparently remained constant.

There have been but slight changes in the acreage and production. The trade, however, shows a decrease, both in the imports and in the exports, of about the same quantity. Neither the consumption of hops nor the quantity of beer brewed shows any tendency to increase.

TABLE 13.—*Trade, production, acreage, and consumption of hops, and quantity of beer brewed, in France, 1890–1905.*

Calendar year.	Imports.	Domestic exports.	Area.	Production.	Consumption (production + imports – exports).	Beer brewed.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Acres.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>U. S. barrels (31 gallons).</i>
1890.....	7,750,904	2,094,318	(a)	9,778,821	15,435,407	7,235,628
1891.....	7,314,171	2,544,811		6,396,931	11,166,291	7,078,143
1892.....	6,403,135	2,045,931		7,897,617	12,254,821	7,616,498
1893.....	5,118,096	1,909,315		5,945,204	9,153,985	7,616,770
1894.....	5,772,664	1,323,463		6,993,502	11,442,703	7,195,725
Average, 1890–1894..	6,471,794	1,983,568	(a)	7,402,415	11,890,641	7,348,553
1895.....	5,693,585	632,563	7,942	7,553,917	12,617,939	7,556,732
1896.....	5,465,432	852,948	6,986	6,956,464	11,568,948	7,662,363
1897.....	5,214,608	1,140,145	6,763	7,938,182	12,012,645	7,868,602
1898.....	5,376,795	406,385	7,028	6,734,018	11,704,428	8,145,000
1899.....	5,183,554	703,296	6,894	8,716,855	13,197,113	8,628,355
Average, 1895–1899....	5,387,395	747,067	7,123	7,579,887	12,220,215	7,972,210
1900.....	4,843,222	471,719	7,045	7,988,448	12,359,951	8,745,276
1901.....	4,779,155	230,650	7,393	7,055,672	11,604,177	^b 12,356,900
1902.....	4,312,256	541,964	6,711	5,251,410	9,021,702	12,165,155
1903.....	5,045,432	442,521	7,198	7,810,967	11,913,878	11,675,140
1904.....	4,428,343	784,610	7,215	7,753,000	11,396,733	12,159,190
Average, 1900–1904..	4,681,682	494,293	7,112	7,071,899	11,259,288	11,420,332
1905.....	3,879,328	606,364	7,386	10,969,538	14,242,502	11,434,760

^a No data.

^b Sudden great increase apparently due to change in statistical method.

NETHERLANDS.

The production of hops in the Netherlands is small and not changing much. The principal feature of the trade is the large quantity of the imports not retained for home consumption but reexported. This is evident when the production and exports are compared. As the returns do not show imports for home consumption nor exports of domestic hops, the figures shown in the accompanying table have to be used. The Netherlands imports most of her hops from Belgium and Germany and ships them to the United Kingdom and the United States. The consumption of hops shows a decline in the last fifteen years. As there are no available data covering beer production, nothing can be stated with regard to its changes.

TABLE 14.—*Trade, production, and consumption of hops in the Netherlands, 1890–1905.*

Calendar year.	Imports.	Exports.	Production.	Consumption (production + imports – exports).
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
1890.....	3,836,754	1,727,249	116,087	2,225,592
1891.....	3,416,240	1,350,774	137,348	2,202,814
1892.....	3,819,373	1,406,417	147,092	2,560,048
1893.....	3,088,645	1,326,620	222,005	1,984,030
1894.....	3,702,226	1,394,933	233,081	2,540,374
Average, 1890–1894.....	3,572,648	1,441,199	171,123	2,302,572
1895.....	3,495,452	1,943,088	252,041	1,804,405
1896.....	3,551,736	1,505,539	209,439	2,255,636
1897.....	3,219,372	1,626,292	137,436	1,730,516
1898.....	2,358,610	910,573	49,300	1,497,337
1899.....	2,666,396	748,207	219,801	2,137,990
Average, 1895–1899.....	3,058,313	1,346,740	173,603	1,885,176
1900.....	2,484,960	714,646	257,610	2,027,924
1901.....	2,822,020	961,927	137,740	1,997,833
1902.....	2,996,258	1,920,942	137,410	1,212,726
1903.....	2,742,861	1,235,779	100,112	1,607,194
1904.....	4,020,148	2,104,063	^a 158,000	2,074,085
Average, 1900–1904.....	3,013,249	1,387,471	^a 158,000	1,783,778
1905.....	3,368,742	1,256,989	^a 158,000	2,269,753

^a Average, 1900–1903.

AUSTRALIA.

As no data are available for the Commonwealth of Australia prior to 1900, little can be told about the changes in trade in hops. The figures for production show a decrease, and the brewing of beer appears to be increasing.

CANADA.

The production of hops in Canada apparently has not kept pace with the consumption, for the trade returns show that the imports have been increasing while the domestic exports have decreased. Since Canada has issued no returns for hop production except in census years, the actual consumption can not be obtained. The increased production of beer would indicate increased consumption.

DENMARK.

The returns for Denmark show that there have been but slight changes in the hop trade during the last 15 years. The beer production shows an increase. Since there are no available data on the production of hops, it can not be ascertained whether there has been an increasing consumption. The two kinds of beer are given: "Taxed" beer, which includes all beer above a certain standard of alcohol, and the beer "not taxed," which includes beer below that standard and corresponding to the English small beer.

SWEDEN.

Table 18 shows that in Sweden there has been an increase in the production of beer accompanied by an increase in the imports of hops. The home production apparently has had no effect upon the trade.

BRITISH INDIA.

During the last sixteen years British India's average imports of hops have amounted to more than 475,000 pounds. The large quantity of hops to the barrel of beer shows the English taste. As only a small proportion of this trade is with the United States, it would seem that this might be an opportunity for the hop merchants of the Pacific Coast to extend their trade.

CAPE OF GOOD HOPE.

The figures for beer manufacture in the Cape of Good Hope are meager. The trade returns indicate increased imports of hops, but according to the census returns the beer production has decreased. This is an apparent contradiction, for little or no hops are produced at home.

SWITZERLAND.

Beer production in Switzerland has increased during the last 15 years, but the imports of hops have remained practically constant. A small quantity of hops may have been raised at home to supply the increased demand of the brewers.

TABLE 15.—Trade, production, and consumption of hops, and quantity of beer brewed, in Australia, 1890-1905.

Calendar year.	Imports.	Domestic exports.	Pro-duction.	Consumption (production + imports - exports).	Beer brewed.
	Pounds.	Pounds.	Pounds.	Pounds.	U. S. barrels (31 gallons).
1890.....	(a)	(a)	1,324,663	(a)	(a)
1891.....			1,320,790		
1892.....			1,354,182		
1893.....			1,226,061		
1894.....			1,231,525		
Average, 1890-1894.....	(a)	(a)	1,291,444	(a)	(a)
1895.....	(a)	(a)	1,037,986	(a)	(d)
1896.....			985,602		1,354,536
1897.....			1,289,268		1,438,653
1898.....			1,180,850		1,523,712
1899.....			1,368,584		1,578,140
Average, 1895-1899.....	(a)	(a)	1,172,458	(a)	(a)
1900.....	1,078,986	1,897	912,801	1,989,890	1,707,212
1901.....	1,230,459	8,660	1,003,671	2,225,470	1,703,782
1902.....	1,140,388	30	902,828	2,043,186	1,817,381
1903.....	975,658	7,682	984,967	1,952,943	1,687,795
1904.....	913,830	45,627	1,138,668	2,006,871	(a)
Average, 1900-1904.....	1,067,864	12,779	988,587	2,043,672	b1,729,042
1905.....	1,279,362	1,028	1,232,686	2,511,020	(a)

a No data.

b Average, 1900-1903.

TABLE 16.—*Trade, production, and consumption of hops, and quantity of beer brewed, in Canada, 1890–1905.*

Fiscal year beginning July 1.	Imports.	Domestic exports.	Production.	Consumption (production + imports – exports).	Beer brewed.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>U.S. barrels (31 gallons.)</i>
1890.....	606,464	100,254	a1,126,230	1,632,440	665,490
1891.....	790,626	24,953	(b)	(b)	699,277
1892.....	559,289	319,503			655,820
1893.....	489,582	257,441			664,686
1894.....	872,314	239,225			708,196
Average 1890–1894.....	663,655	188,275	(b)	(b)	678,694
1895.....	532,055	89,412	(b)	(b)	682,235
1896.....	608,499	86,829			697,169
1897.....	566,772	168,972			692,275
1898.....	708,549	73,818			769,036
1899.....	930,897	71,780			816,642
Average 1895–1899.....	669,354	98,162	(b)	(b)	731,471
1900.....	806,873	181,373	a1,004,216	1,629,716	902,065
1901.....	789,598	76,994	(b)	(b)	971,689
1902.....	623,403	69,455			1,069,040
1903.....	781,822	53,278			996,724
1904.....	737,054	48,234			1,056,903
Average 1900–1904.....	747,750	85,867	(b)	(b)	999,284
1905.....	1,021,265	71,641	(b)	(b)	893,596

^aCensus returns.^bNo data.TABLE 17.—*Trade in hops, and quantity of beer brewed, in Denmark, 1890–1905.*

Calendar year.	Imports.	Domestic exports.	Beer brewed.	
			Taxed.	Not taxed. ^a
	<i>Pounds.</i>	<i>Pounds.</i>	<i>U.S. barrels (31 gallons.)</i>	<i>U.S. barrels (31 gallons.)</i>
1890.....	1,392,929	12,222	(b)	(b)
1891.....	1,178,191	11,148		
1892.....	1,340,698	11,952		
1893.....	1,203,000	13,974		
1894.....	1,439,267	3,760	657,734	1,066,795
Average, 1890–1894.....	1,310,817	10,611	c 629,933	c 1,050,003
1895.....	1,312,162	4,698	686,688	1,109,090
1896.....	1,430,298	23,513	756,364	1,155,869
1897.....	1,057,289	2,560	795,426	1,165,135
1898.....	1,351,562	1,817	817,054	1,250,702
1899.....	1,482,802	2,967	866,866	1,261,474
Average, 1895–1899.....	1,326,823	7,111	784,480	1,188,454
1900.....	1,258,068	3,128	847,426	1,240,406
1901.....	1,308,994	1,364	892,034	1,276,598
1902.....	1,300,617	55	790,379	1,243,920
1903.....	1,401,037	.....	794,465	1,293,052
1904.....	1,359,149	22,848	817,924	(b)
Average, 1900–1904.....	1,325,573	5,479	828,446	d 1,263,494
1905.....	1,378,660	.....	754,845	(b)

^a Year beginning June 1.^b No data.^c Average, 1892–1894.^d Average, 1900–1903.

TABLE 18.—*Trade in hops, and quantity of beer brewed, in Sweden, 1891–1905.*

Calendar year.	Imports.	Domestic exports.	Beer brewed.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>U. S. barrels (31 gallons).</i>
1891.....	1,067,319	683	(a)
1892.....	900,378	4,198	
1893.....	866,555	1,618	
1894.....	1,279,245	498	
1895.....	1,116,698	4,160	
Average, 1891–1895.....	1,047,839	2,231	1,134,278
1896.....	1,194,299	736	(a)
1897.....	1,201,279	.....
1898.....	1,282,918	.....
1899.....	1,567,301	2,810	
1900.....	1,542,232	3,532	
Average, 1896–1900.....	1,357,606	1,416	1,433,400
1901.....	1,536,240	1,246	(a)
1902.....	1,461,343	.....
1903.....	1,436,809	933	1,779,708
1904.....	1,298,174	12,624	(a)
1905.....	1,662,563	1,464	
Average, 1901–1905.....	1,479,026	3,253	(a)

^a No data.TABLE 19.—*Imports of hops, and quantity of beer brewed, in British India, 1890–1905.*

Fiscal year beginning April 1.	Imports.	Beer brewed.
	<i>Pounds.</i>	<i>U. S. barrels (31 gallons).</i>
1890.....	437,472	200,969
1891.....	420,112	183,670
1892.....	399,728	186,960
1893.....	477,680	214,127
1894.....	583,296	236,921
Average, 1890–1894.....	463,658	204,529
1895.....	569,408	241,449
1896.....	691,824	244,352
1897.....	336,784	210,025
1898.....	423,472	228,098
1899.....	472,416	215,482
Average, 1895–1899.....	498,781	227,881
1900.....	456,960	191,488
1901.....	460,208	214,940
1902.....	495,824	250,583
1903.....	517,328	234,793
1904.....	469,728	240,714
Average, 1900–1904.....	480,010	226,504
1905.....	448,224	(a)

^a No data.

TABLE 20.—Imports of hops, and quantity of beer brewed, in the Cape of Good Hope, 1890-1905.

Calendar year.	Imports.	Beer brewed.
	<i>Pounds.</i>	<i>U. S. barrels</i> <i>(31 gallons).</i>
1890.....	(a)	101,223
1891.....	(a)	
1892.....	131,376	(a)
1893.....	175,392	
1894.....	173,600	
Average, 1890-1894.....	(a)	(a)
1895.....	205,408	(a)
1896.....	246,400	
1897.....	307,216	
1898.....	284,480	
1899.....	272,160	
Average, 1895-1899.....	263,133	(a)
1900.....	336,560	(a)
1901.....	<i>b</i> 797,700	
1902.....	848,960	
1903.....	555,856	
1904.....	487,424	(a)
Average, 1900-1904.....	605,300	(a)
1905.....	308,112	(a)

a No data.*b* Estimated.

TABLE 21.—Imports of hops, and quantity of beer brewed, in Switzerland, 1890-1905.

Calendar year.	Imports.	Beer brewed.
	<i>Pounds.</i>	<i>U. S. barrels</i> <i>(31 gallons).</i>
1890.....	(a)	983,913
1891.....	934,980	1,178,487
1892.....	942,255	1,244,081
1893.....	789,475	1,296,883
1894.....	1,070,124	1,288,854
Average, 1890-1894.....	<i>b</i> 934,208	1,198,444
1895.....	1,057,337	1,450,921
1896.....	1,061,525	1,601,767
1897.....	1,250,021	1,706,734
1898.....	1,185,646	1,805,064
1899.....	1,375,464	1,826,331
Average, 1895-1899.....	1,185,999	1,678,163
1900.....	1,020,960	1,846,182
1901.....	938,949	1,673,135
1902.....	1,003,764	1,703,296
1903.....	1,012,142	1,771,305
1904.....	1,168,891	1,802,014
Average, 1900-1904.....	1,028,941	1,759,206
1905.....	1,347,685	(a)

a No data.*b* Average, 1891-1894.

SUMMARY.

HOP INDUSTRY.

From the foregoing materials it is evident that the United Kingdom, Germany, and the United States are the countries which consume the most hops. Austria-Hungary, Germany, and the United States are

the principal exporting countries. In the case of Germany the hops are imported from Austria-Hungary, while the United States, France, Belgium, and the Netherlands in turn receive their imported hops from Germany. The United Kingdom derives its imported hops from the United States, the Netherlands, Belgium, and Germany.

The principal producing countries are Austria-Hungary, Germany, the United Kingdom, and the United States. Of these four countries the largest yields per acre are obtained in the United Kingdom and the United States, while the best quality is grown in Austria-Hungary and Germany. The decrease in the acreage in Germany and the United Kingdom and the increase in Austria and the United States indicate the trend of hop production in the world. They also indicate the quality of hops that the United States must produce if this country is to compete in the Continental markets.

Another point of interest is the average quantity of hops used to the barrel of beer. The United Kingdom and France require a much larger quantity of hops to the barrel than Germany and other Continental countries. The average for the United States is below that of the United Kingdom, France, Australia, and New Zealand, and above that of all other countries represented. The hops from certain Continental countries, where special attention is given to quality, bring better prices and are held in higher esteem than American hops, even in our own country.

TABLE 22.—Comparative trade, production, and consumption of hops in principal countries, annual average for 1900–1904.

Country.	Imports.	Exports.	Production.	Average yield, per acre.	Consumption (production + imports – exports).	Beer brewed.	Pounds of hops per barrel.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>U. S. barrels (31 gallons).</i>	<i>Pounds.</i>
Australia.....	1,067,864	12,779	988,587	(a)	2,043,672	^b 1,729,042	1.18
Austria-Hungary..	1,800,515	11,928,460	20,877,293	421	10,749,348	17,617,383	.61
Belgium.....	4,948,007	4,188,128	7,442,691	^c 1,321	8,202,570	12,583,448	.65
British India.....	480,010	.....	(a)			226,504	
Canada.....	747,750	85,867	^d 1,004,216	(a)	(a)	999,284	(a)
Cape of Good Hope.	605,500	.....	(a)			66,387	
Denmark.....	1,325,573	5,479	(a)			2,091,940	
France.....	4,681,682	494,293	7,071,899	994	11,259,288	11,420,332	.99
Germany.....	^e 7,144,342	^e 20,972,789	44,300,865	482	30,472,418	59,471,629	.51
New Zealand.....	83,685	472,886	1,020,609		631,399	282,256	2.24
Netherlands.....	3,013,249	1,387,471	^b 158,000		1,783,778	(a)	(a)
Russia.....	1,015,376	1,568,155	^f 10,800,000	(a)	^f 10,247,221	^g 4,919,434	(h)
Sweden.....	1,454,960	3,667	(a)		(a)	ⁱ 1,779,708	(a)
Switzerland.....	1,028,941	.....	(a)			1,759,206	(a)
United Kingdom...	20,236,832	1,907,850	45,662,528	^g 915	63,391,530	49,904,601	1.27
United States.....	3,704,411	11,863,626	46,843,607	^j 885	^k 38,651,466	45,934,352	.84

^a No data.

^b Average, 1900–1903.

^c Average production, 1903–4.

^d Census returns, 1901.

^e Not including free ports.

^f Average, 1901–1904.

^g Average, 1900–1902.

^h Data not obtainable on account of the large quantity of hops used in home-made beverages.

ⁱ Production in 1903.

^j Average yield in 1899, from Census returns.

^k Hops consumed by brewers.

TABLE 23.—*Hop crop of countries named, 1901-1905.*

[Substantially the world's crop; not including Canada and a few countries of very small production.]

Country.	1901.	1902.	1903.	1904.	1905.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
United States: ^a					
New York	9,000,000	5,850,000	9,000,000	11,880,000	9,360,000
California	9,360,000	10,335,000	10,920,000	12,285,000	14,235,000
Oregon	13,845,000	16,965,000	17,550,000	17,550,000	22,191,000
Washington	6,630,000	5,850,000	6,825,000	7,410,000	9,750,000
Total United States	38,835,000	39,000,000	44,295,000	49,125,000	55,536,000
Austria-Hungary:					
Austria	32,866,000	19,829,000	9,010,000	19,598,000	39,305,000
Hungary	560,000	631,000	808,000	631,000	^b 700,000
Total Austria-Hungary	33,426,000	20,460,000	9,818,000	20,229,000	40,005,000
Belgium	9,149,000	7,360,000	4,786,000	9,830,000	11,281,000
France	7,056,000	5,251,000	7,311,000	7,753,000	10,970,000
Germany	27,599,000	50,185,000	46,562,000	49,136,000	64,500,000
Netherlands	137,000	137,000	100,000	^b 158,000	^b 158,000
Russia: ^c	11,000,000	11,000,000	12,500,000	8,700,000	14,500,000
United Kingdom: England	72,731,000	34,837,000	47,160,000	31,621,000	77,946,000
Total Europe	161,098,000	129,230,000	128,237,000	127,427,000	219,360,000
Australasia:					
Victoria	307,000	252,000	176,000	274,000	162,000
Tasmania	697,000	651,000	809,000	865,000	912,000
New Zealand: ^c	1,000,000	930,000	940,000	1,150,000	1,120,000
Total Australasia	2,004,000	1,833,000	1,925,000	2,289,000	2,194,000
Total ^d	201,937,000	170,063,000	174,457,000	178,841,000	277,090,000

^a Estimate based upon reports to California Fruit Grower and American Agriculturist.^b Average production.^c Unofficial estimate.^d Excluding Canada, for which the census of 1901 shows a production during the preceding year of 1,001,203 pounds.TABLE 24.—*International trade in hops, 1901-1905.*

[Substantially the international trade of the world.]

EXPORTS.

Country.	Year beginning—	1901.	1902.	1903.	1904.	1905.
		<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Austria-Hungary	January 1	22,397,416	11,497,765	5,900,250	10,037,424	18,777,206
Belgium	do.	2,259,211	3,659,302	3,438,251	9,665,294	2,582,318
France	do.	230,650	541,964	442,521	784,610	606,364
Germany: ^a	do.	14,528,459	22,702,756	22,003,671	24,358,207	22,855,096
Netherlands	do.	961,927	1,920,942	1,235,779	2,104,063	1,256,989
New Zealand	do.	481,376	482,832	433,776	644,336	^b 369,712
Russia	do.	2,128,597	1,400,129	1,744,212	1,117,294	^b 1,083,384
United Kingdom	do.	2,037,504	1,767,920	2,499,504	1,554,336	1,820,448
United States	July 1	10,715,151	7,794,705	10,985,988	14,858,612	13,026,904
Other countries		91,681	78,206	107,526	136,805	^b 74,133
Total		55,831,972	51,846,521	48,791,458	65,260,981	62,452,554

^a Not including free ports.^b Preliminary.

TABLE 24.—*International trade in hops, 1901–1905—Continued.*

IMPORTS.

Country.	Year beginning—	1901.	1902.	1903.	1904.	1905.
		<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Australia.....	January 1....	1,230,459	1,140,388	975,658	913,830	1,279,322
Austria-Hungary.....	do.....	608,476	1,025,811	4,481,556	2,109,162	1,187,169
Belgium.....	do.....	3,814,620	4,427,816	6,478,233	5,826,301	6,617,281
British India.....	April 1.....	460,208	495,824	517,328	469,728	448,224
Canada.....	July 1.....	789,598	623,403	781,822	737,054	1,020,225
Cape of Good Hope.....	January 1.....	c 797,700	848,960	555,856	487,424	308,162
Denmark.....	do.....	1,398,994	1,300,617	1,401,037	1,359,149	1,378,610
France.....	do.....	4,779,155	4,312,256	5,045,432	4,428,343	3,879,368
Germany ^a	do.....	15,390,025	6,004,068	2,992,995	5,346,208	9,047,929
Netherlands.....	do.....	2,822,020	2,996,258	2,742,861	4,020,148	3,368,782
Russia.....	do.....	872,016	945,289	807,085	1,363,547	1,191,742
Sweden.....	do.....	1,536,240	1,461,343	1,436,809	1,298,174	1,662,523
Switzerland.....	do.....	938,949	1,003,764	1,012,142	1,168,891	1,347,665
United Kingdom.....	do.....	12,447,232	20,593,888	11,876,032	34,437,312	11,147,584
United States.....	July 1.....	2,805,293	6,012,510	2,758,163	4,339,379	10,113,989
Other countries.....		3,127,698	2,920,344	2,747,109	2,453,778	b 1,755,691
Total.....		53,724,683	56,112,539	47,110,118	69,758,428	55,754,326

^a Not including free ports.^b Preliminary.^c Estimated.

BEER INDUSTRY.

The three principal beer-producing countries are Germany, the United Kingdom, and the United States. It is only within the last two years that the beer production of the United States has exceeded that of the United Kingdom. This rapid increase in the United States is due both to the rapid increase in the population and to increased consumption per capita. In the year beginning July 1, 1905, the beer production was nearly 55,000,000 barrels.

If the increase in the United States is as great in the future as it has been in the past, the production of the United States will soon equal that of Germany. This would indicate that there will be an increased demand for hops at home. Since in both the United Kingdom and Germany hop production is decreasing and the beer production increasing, the possibility of finding a foreign market for American hops ought to increase, unless the diminished use of hops in beer brewing shall keep pace with diminished hop production.

The fifteen countries mentioned in Table 25 brew nearly all of the world's beer, the omitted beer being mostly of the home-brewed sorts, of small account, even in the aggregate. The yearly average brewery production for 1890–1894 for the fifteen countries, with the qualifications stated in the footnotes to Table 25, the Netherlands being omitted, was 166,048,235 barrels; the yearly average for 1900–1904 was 210,785,506 barrels, an increase of 26.9 per cent. The beer production of the fifteen countries for 1904, the figures of 1903 or 1902 being brought forward in some cases in want of later information, was 215,185,122 barrels. In this total the production of Germany is represented by 27.8 per cent; the United States by 23.0 per cent; the

United Kingdom by 22.6 per cent; Austria-Hungary by 8.5 per cent; Belgium by 6.1 per cent; and France by 5.7 per cent.

TABLE 25.—*Comparative beer brewing of principal countries, 1890-1904.^a*

Country.	Yearly average.			Beer brewed in 1904.
	1890-1894.	1900-1904.	Per cent of increase.	
	<i>Barrels.</i>	<i>Barrels.</i>	<i>Per cent.</i>	<i>U. S. barrels (31 gallons).</i>
Germany.....	46,326,785	59,471,629	28.4	59,859,380
United States ^b	32,779,434	45,934,352	40.2	49,522,029
United Kingdom.....	44,731,550	49,904,601	11.6	48,524,369
Austria-Hungary.....	14,561,565	17,617,383	21.0	c 18,183,537
Belgium.....	9,442,760	12,583,448	33.3	13,052,823
France.....	7,348,553	11,420,332	55.4	12,159,190
Russia.....	e 4,203,458	f 4,919,434	17.0	g 4,861,419
Denmark.....	e 1,679,936	2,091,940	24.5	c 2,087,517
Switzerland.....	1,198,444	1,759,206	46.8	1,802,014
Sweden.....	h 1,134,278	c 1,779,708	56.9	c 1,779,708
Australia ⁱ	1,473,760	d 1,729,042	17.3	c 1,687,795
Canada ^b	678,694	999,284	47.2	1,056,903
New Zealand.....	183,266	282,256	54.0	301,337
British India ^j	204,529	226,504	10.7	240,714
Cape of Good Hope.....	k 101,223	c 66,387	(l)	c 66,387
Total.....	166,048,235	210,785,506	26.9	215,185,122

^a Data for the Netherlands not available.

^b Year beginning July 1.

^c Beer brewed in 1903.

^d Average, 1900-1903.

^e Average, 1892-1894.

^f Average, 1900-1902.

^g Beer brewed in 1902.

^h Average, 1891-1895.

ⁱ Average, 1896-1899.

^j Year beginning April 1.

^k Beer brewed in 1890.

^l Decrease.

SUPPLEMENTARY NOTE.—A Farmers' Bulletin, prepared in the Bureau of Plant Industry, will be issued later dealing with the propagation, planting, and cultivation of the hop, methods of pruning, trellisses and systems of training, methods of picking, of curing, and of baling, cost of production, marketing, and the profits of the industry.

This Farmers' Bulletin may be obtained without cost by addressing the U. S. Department of Agriculture, Washington, D. C., and will also be for distribution by Senators, Representatives, and Delegates in Congress.

